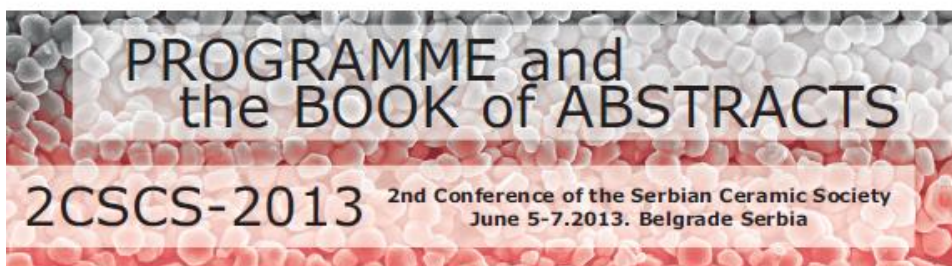


The Serbian Ceramic Society
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research - University of Belgrade
Institute of Physics - University of Belgrade
Vinča Institute of Nuclear Sciences - University of Belgrade



Edited by:
Snežana Bošković
Vladimir V. Srdić
Zorica Branković

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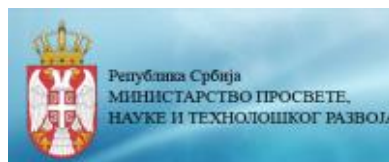
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**June 5-7, 2013
Belgrade, Serbia
2CSCS-2013**

Edited by:
**Snežana Bošković
Vladimir Srdić
Zorica Branković**

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Dear ceramists,

On behalf of all committees of the 2nd Conference of The Serbian Ceramic Society (2CSCS-2013), and also on behalf of the co-organizers of this Conference i.e. Academy of Engineering Sciences of Serbia, Institute for Multidisciplinary Research - University of Belgrade, Institute of Physics - University of Belgrade, Vinča Institute of Nuclear Sciences - University of Belgrade, it is our great pleasure to welcome you to Belgrade and Serbia on June 5-7th 2013.

The Serbian Ceramic Society is national society which brings together the scientists and engineers working in the fields of research and application of ceramic materials. There is rather large ceramic community in Serbia since it has long tradition which involves both traditional and advanced ceramic materials. The members of The Serbian Ceramic Society, are professionally dealing with very attractive topics like nanostructured ceramics, ceramics in energy conversion, eco- and bio-ceramics, as well as, ultra high temperature ceramic composites. The activities of The Serbian Ceramic Society include organizing highly interesting lectures for the members, but also Students Meetings, which has taken place in Novi Sad under the sponsorship of the European Ceramic Society each year since 1998. In addition, the Serbian Ceramic Society publishes, since 2007, the Journal "Processing and Application of Ceramics" which is becoming ever more attractive to authors from abroad.

The aim of the 2CSCS-2013 is to bring together the scientists working in the field of ceramic materials for the exchange of attractive results in the areas of the development, characterization and application of ceramic materials as well as, to improve contacts for future scientific cooperation.

The abstracts of the papers that are going to be presented at the 2nd Conference of The Serbian Ceramic Society are summarized in this book. They are divided according to topic to which the papers belong, i.e. into:

1. **Ceramic Powders, Characterization and Processing** (chemical routes, hydrothermal synthesis, non-conventional routes, dispersion and processing aids, wet processing, spray-drying, plastic forming, net shape forming and porous products)
2. **High Temperature Phenomena, Sintering and Microstructure Design** (high temperature reactions, phase diagrams, densification and grain growth, tailoring microstructure to properties, hard coatings and wear)
3. **Electro and Magnetic Ceramics** (ferroelectric and relaxors, piezoelectric, films, multilayer devices, interfaces, capacitor, microwave ceramics, varistors, conducting ceramics and electrodes, ionic conductors, resistors)
4. **Ceramic Composites, Membranes and Multimaterials** (ceramic matrix composites, fibres, nanocomposites and polymer transformation, laminates, biocomposites)
5. **Refractories, Cements, Glass and Corrosion** (raw materials and engineering, emission control, environment, recycling)
6. **Ceramic Heritage**

Four plenary lectures, fourteen invited lectures, twenty-two oral and fifty-seven poster presentations will be presented at the Conference. This book contains, as mentioned, all the received abstracts, and some of the papers, after regular peer review will be published in the international journal *The Processing and Application of Ceramics*.

June 5-7th, 2013.
Belgrade, Serbia

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INFLUENCE OF DOPANTS ON BARIUM BISMUTH TITANATE ELECTRICAL PROPERTIES

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The Aurivillius structure has capability to host ions of different size, so a large number of different dopants can be accommodated in the BaBi₄Ti₄O₁₅ (BBT) lattice. It was detected that various substitutions of Bi³⁺ and Ti⁴⁺ ions can affect the change of microstructure and electrical properties of barium bismuth titanate ceramics. Doping of BBT ceramics is very important due to possibility to obtain materials with required characteristics.

In this work, pure and niobium and lanthanum doped barium bismuth titanate powders were prepared by conventional solid state method, according to formulas BaBi_{4-x}La_xTi₄O₁₅ and BaBi₄Ti_{4-5/4x}Nb_xO₁₅ (x=0.05). Obtained powders were uniaxially pressed and sintered at different temperature depending on the composition.

The influence of dopant type on structure change, grain size reduction and microstructure development was analyzed. XRD measurements showed formation of orthorhombic BBT crystal structure without presence of secondary phase in doped samples. Dopants had influence on shifting of temperature phase transition peaks to the lower temperatures, broadening of $\epsilon - T$ curves and increasing relaxor behavior of phase transition. Temperature dependence of the electrical conductivity pointed out that niobium as a donor dopant decrease conductivity and lanthanum as a isovalent dopant increase conductivity of BBT ceramics. Obtained results were analyzed in the frame of the influence of the grain and grain boundaries contribution to the dielectric behavior through impedance spectroscopy.